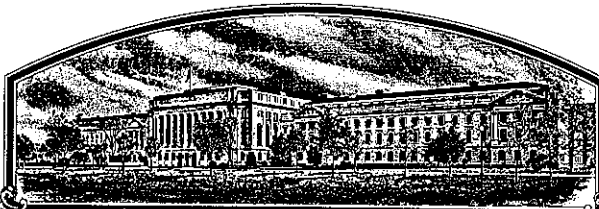


No.

8300129



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Jacob Hartz Seed Co., Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (8 U.S.C. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Hartz 7126'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 26th day of October in the year of our Lord one thousand nine hundred and eighty-four.

Attest:

*Kenneth H. Evans*  
Commissioner

Plant Variety Protection Office  
Livestock, Meat, Grain & Seed Division  
Agricultural Marketing Service

*R. Block*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

FORM APPROVED: OMB NO.0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions on reverse)

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) Jacob Hartz Seed Co., Inc.		2. TEMPORARY DESIGNATION H76-672-3A		3. VARIETY NAME Undecided HARTZ 7126 4/5 7/19/83	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P. O. Box 946, N. Park Avenue Stuttgart, Arkansas 72160		5. PHONE (Include area code) 501/673-8565		FOR OFFICIAL USE ONLY VPPO NUMBER <b>8300129</b>	
6. GENUS AND SPECIES NAME Glycine max		7. FAMILY NAME (Botanical) Leguminosea		FILING DATE 5/11/83 TIME 8:00 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Soybean		9. DATE OF DETERMINATION 1981		FEES RECEIVED AMOUNT FOR FILING \$ 1,000 DATE 5/11/83 AMOUNT FOR CERTIFICATE \$ 500.00 DATE 9/28/84	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				12. DATE OF INCORPORATION 1948	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Arkansas				13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Jacob Hartz Seed Co., Inc. P. O. Box 946, N. Park Avenue Stuttgart, AR 72160	
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified		
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? In U.S. as of May 6, 1983 <input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input type="checkbox"/> No					
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT Curtis Williams Director of Research				DATE May 6, 1983	
SIGNATURE OF APPLICANT				DATE 1	

## EXHIBIT A

## ORIGIN AND BREEDING HISTORY OF THE VARIETY

*'HARTZ 7126'*

H76-672-3A originated from an F<sub>2</sub> plant selected at Stuttgart in 1976 from the cross 'Forrest' x 'Ransom'. Seed from the F<sub>2</sub> plant was advanced in a plant row (No.672) in Belize, C.A., and harvested in bulk the winter of 1976-77. The F<sub>4</sub> generation was grown in an observation nursery at Stuttgart in 1977. The line identified as H76-672 was segregating for plant height and maturity. Two sets of four plants each designated 1A-4A and 1B-4B were selected and grown in plant to row in 1978. Row 3A was harvested in bulk and yield tested as H76-672-3A in 1979 through 1982 in Jacob Hartz Seed Company tests. It was tested in experiment station tests in Arkansas, Louisiana, Alabama, Georgia and Texas in 1981 and in Arkansas, Louisiana, Alabama, Georgia, Texas, Tennessee, South Carolina and Florida in 1982. *'HARTZ 7126'* H76-672-3A was rated for resistance to foliar diseases and nematodes at Stuttgart and other Jacob Hartz Seed Company test sites.

*'HARTZ 7126'*

Evidence of Stability - H76-672-3A breeds true for flower color, pubescence color, hilum color, maturity, Race 3 cyst nematode resistance and bacterial pustule resistance.

Kinds of Variants - The usual environmental variations in seed size and plant height have been observed. A low frequency (about two per pound) of seeds with a faded hilum color appearing grayish, light brown and dark brown occur, but all have purple flowers.

AS MANY AS 0.4% OF BUFF OR IMPERFECT BLACK HILA SEED MAY BE PRESENT THAT WERE PRODUCED ON EITHER WHITE OR PURPLE FLOWERED GRAY PUBESCENT PLANTS. (APPLICANT'S LETTER OF 1/29/87)

RJS 1/30/87

JACOB



HARTZ

8300129

Telephone (501) 673-8565/TWX: 910-720-6244

SEED

P.O. Box 946 --- Stuttgart, Arkansas 72160

Company, Inc.

June 20, 1984

Mr. Robert J. Snyder, Examiner  
Plant Variety Protection Office  
National Agricultural Library Building  
Beltsville, MD 20705

**EXHIBIT A**

Dear Mr. Snyder:

Subject: Soybean Applications: No. 8300126 'Hartz 5171'  
No. 8300127 'Hartz 6383'  
No. 8300128 'Hartz 5370'  
No. 8300129 'Hartz 7126'  
No. 8300130 'Hartz 5252'

This is in response to your letter of May 31 concerning the uniformity and stability of the five Hartz soybean varieties listed above.

1. Uniformity: The variants described in Exhibit A of the Application for Plant Variety Protection are acceptable to the industry. They do not represent either a nutritional or economic effect on the variety for either the farmer or end user. Each year we have tried unsuccessfully to eliminate all the variants by roguing. However, the variants have not exceeded those listed in Exhibit A.

2. Stability: Each of the varieties are stable for the major morphological characters. The seed can be produced through three generations from Breeders seed (Foundation through Certified seed) without significant change. However, the usual care in roguing, combining, and seed cleaning must be followed as with all varieties. Hartz 5171, Hartz 6383, Hartz 7126, and Hartz 5252 have been produced for two years under commercial conditions and were inspected in the field and laboratory by the Arkansas State Plant Board for certification. Hartz 5370 was grown commercially for the first time in 1983. We have had certification problems with a few lots, but the problems were all judged to be due to mechanical mixture.

Thank you.

Sincerely,

JACOB HARTZ SEED COMPANY, INC.

*Curtis Williams*

Curtis Williams  
Director of Research

CW/mjt



IMPORTANT—The JACOB HARTZ SEED COMPANY, INC., gives no warranty, express or implied, as to the productiveness of any seeds it sells and will not be in anyway responsible for the crop. Our liability, in all instances, is limited to the purchase price of the seed.

## EXHIBIT B

## NOVELTY STATEMENT

'HARTZ 7126'

<H76-672-3A> is a determinant early Maturity Group VII cultivar with resistance to Race 3 of the soybean cyst nematode, moderate resistance to the reniform nematode, resistance to bacterial pustule, downy mildew and frogeye leafspot. It is susceptible to phytophthora root rot caused by Phytophthora megasperma var. sojae, but has field tolerance to this disease. It is susceptible to root-knot nematode Meloidogyne incognita.

'HARTZ 7126'

<H76-672-3A> has purple flowers, tawny pubescence, tan pod walls and yellow seed with black hila. Plants with purple flowers, gray pubescence and imperfect black hila and plants with white flowers, gray pubescence and buff hila may occur in a frequency of up to two seed per pound, respectively.

'HARTZ 7126'

Plants of <H76-672-3A> can be distinguished from Ransom, Braxton, Bragg, Terra-Vig 708, A7372, DPL 417, DPL 497 and Wilstar 790 by its resistance reaction to Race 3 of the cyst nematode, while those afore varieties are susceptible.

'HARTZ 7126'

Most similar variety: <H76-672-3A> is most similar to Ransom, however,

'HARTZ 7126'

<H76-672-3A> is resistant to Race 3 of the soybean cyst nematode while Ransom is susceptible.

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

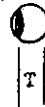
EXHIBIT C  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Jacob Hartz Seed Co., Inc.	TEMPORARY DESIGNATION H76-672-3A	VARIETY NAME <del>Undecided</del> <b>HARTZ 7126</b>
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 946, N. Park Avenue Stuttgart, Arkansas 72160		FOR OFFICIAL USE ONLY PVPO NUMBER <b>8300129</b>

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ).

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

## 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

## 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) \_\_\_\_\_

## 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

## 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

## 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)2 = Type B (SP1<sup>b</sup>)

## 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

☒ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

☒ 31 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## 13. FLOWER COLOR:

☒ 2

1 = White

2 = Purple

3 = White with purple throat

## 14. POD COLOR:

☒ 1

1 = Tan

2 = Brown

3 = Black

## 15. PLANT PUBESCENCE COLOR:

☒ 2

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☒ 21 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## 17. PLANT HABIT:

☒ 1

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## 18. MATURITY GROUP:

☒ 1 ☒ 0

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

☒ 2Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)☒ 0Bacterial Blight (*Pseudomonas glycinea*)☒ 0Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

☒ 1Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojae*)☒ -

Race 1

☒ -

Race 2

☒ -

Race 3

☒ -

Race 4

☒ -

Race 5

☒ 2

Other (Specify)

Race Undetermined

☒ 0Target Spot (*Corynespora cassiicola*)☒ 2Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☒ 0Powdery Mildew (*Microsphaera diffusa*)☒ 0Brown Stem Rot (*Cephalosporium gregatum*)☒ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)  
☐ 0 Purple Seed Stain (*Cercospora kikuchii*)  
☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)  
 Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)  
☐ 1 Race 1   ☐ 1 Race 2   ☐ 1 Race 3   ☐ 1 Race 4   ☐ 0 Race 5   ☐ 0 Race 6   ☐ 1 Race 7  
☐ 0 Race 8   ☐ 0 Race 9   ☐ Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

☐ 0 Bud Blight (Tobacco Ringspot Virus)  
☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)  
☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)  
☐ 0 Pod Mottle (Bean Pod Mottle Virus)  
☐ 0 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)  
☐ 0 Race 1   ☐ 0 Race 2   ☐ 2 Race 3   ☐ 1 Race 4   ☐ Other (Specify) \_\_\_\_\_  
☐ 0 Lance Nematode (*Hoplolaimus Colombus*)  
☐ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)  
☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)  
☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)  
☐ 2 Reniform Nematode (*Rotylenchulus reniformis*) (Moderate Resistance)  
☐ OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 0 Iron Chlorosis on Calcareous Soil  
☐ Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)  
☐ 0 Potato Leaf Hopper (*Empoasca fabae*)  
☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape		Seed Coat Luster	
Leaf Shape		Seed Size	
Leaf Color		Seed Shape	
Leaf Size		Seedling Pigmentation	



## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	1/ NO. OF. DAYS MATURITY	2/ PLANT LODGING SCORE	3/ CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	4/ % Protein	4/ % Oil		
H76-672-3A Submitted	149	1.7	109	N/A	N/A	39.6	21.8	12.8	2 and 3
Ransom Name of Similar Variety	149	1.5	94	N/A	N/A	41.4	21.6	14.8	2 and 3

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

1/ Planted May 17, 1982 at Stuttgart 2/ 9 tests 3/ 4 tests 4/ 9 locations

## EXHIBIT D

## BASIS OF APPLICANT'S OWNERSHIP

Jacob Hartz Seed Company, Incorporated, Stuttgart, Arkansas established a plant breeding program in 1972 for the purpose of developing, releasing, and maintaining stocks of soybean varieties developed by its plant breeding program.

Dr. Curtis Williams, plant breeder, was licensed to breed soybeans by the Arkansas State Plant Board, December 9, 1977. Dr. Williams and co-workers developed and tested this variety in trials at Stuttgart, Arkansas.

## EXHIBIT D

Trait	Cultivar			
	HARTZ 7126 <H76-672-3A>	Ransom	Braxton	Bragg
Seed size (g/100) <sup>1/</sup>	12.8	14.8	15.8	-
Maturity date (day in Oct.) <sup>2/</sup>	27	27	28	27
Plant height <sup>3/</sup> (centimeters)	109	94	112	107
(inches)	43	37	44	42
Seed quality score* <sup>4/</sup>	1.7	1.6	1.8	1.7
Lodging score* <sup>5/</sup>	2.1	1.8	1.5	2.0
Flower color	Purple	Purple	Purple	White
Pubescence color	Tawny	Tawny	Tawny	Tawny
Pod wall color	Tan	Tan	Tan	Tan
Hilum color	Black	Black	Black	Black
Cyst nematode, Race 3	Res.	Sus.	Sus.	Sus.

<sup>1/</sup> 8 Locations    <sup>2/</sup> 3 years at Stuttgart    <sup>3/</sup> 3 years at Stuttgart

<sup>4/</sup> 10 Locations    <sup>5/</sup> 3 years at Stuttgart    \* Seed quality was scored 1=very good to 5=very poor quality. Lodging was scored 1=no lodging to 5=all plants down badly.